



METADATA MANAGEMENT

with attribute option combos
and approvals



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(the PEPFAR installation of DHIS2)

OVERVIEW

- ▶ metadata management
- ▶ using two dhis2 features
 - ▷ attribute option combos
 - ▷ approvals
- ▶ designed and developed by Lars and Jim with PEPFAR in mind circa 2015
- ▶ both were designed to be useful in situations very different from PEPFAR's

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1.

DIMENSIONS

BASIC DIMENSIONS

of a data value

- ▶ **What?**

data element and category options

- ▶ **Where?**

organisation unit

- ▶ **When?**

period

DISAGGREGATION CATEGORIES

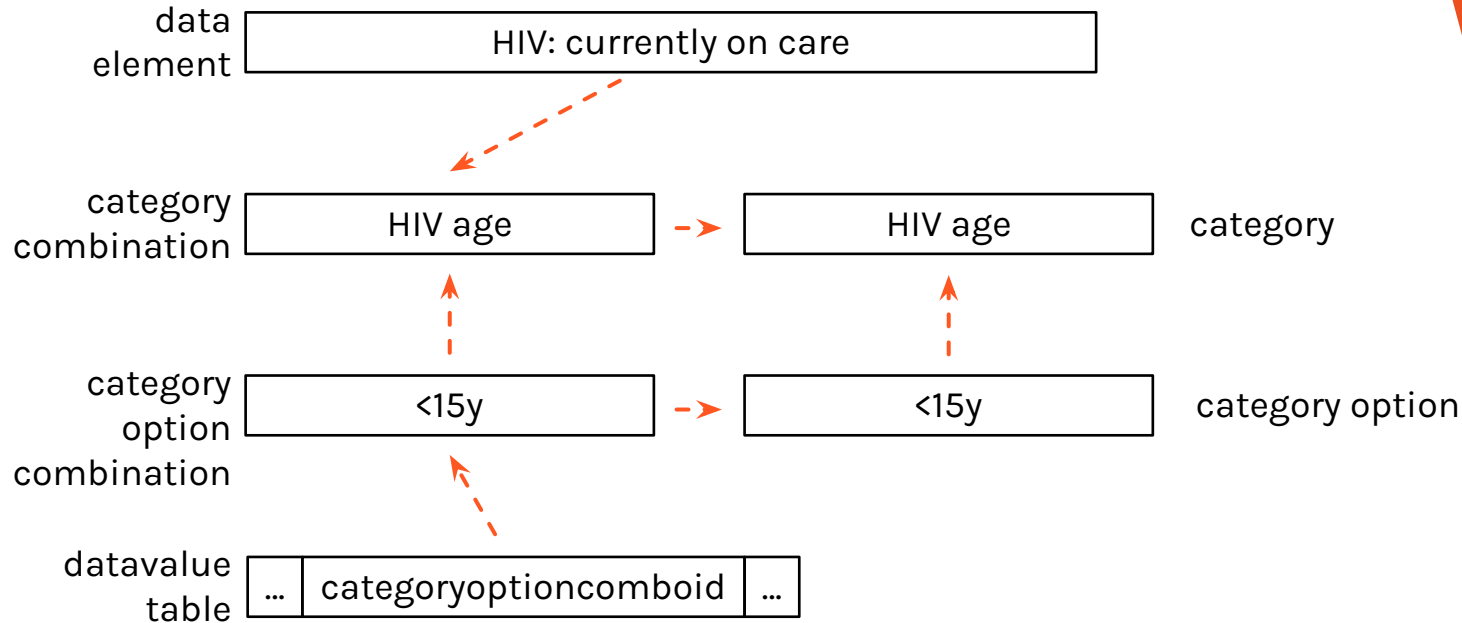
- ▶ age
- ▶ sex
- ▶ test result
- ▶ etc.
- ▶ two dimensions
- ▶ one dimension
- ▶ zero dimensions

age and gender



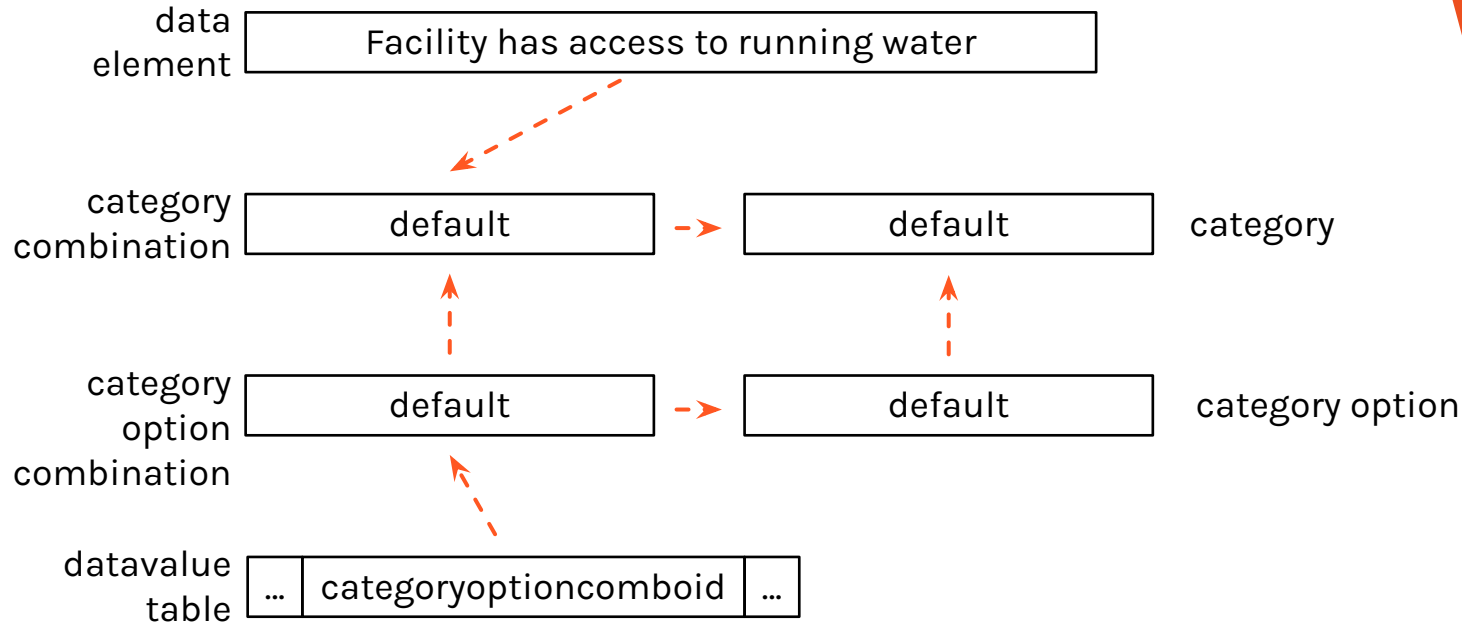
DISAGGREGATION CATEGORY WITH ONE DIMENSION

age



(as seen in the Sierra Leone demo)

DISAGGREGATION CATEGORY WITH ZERO DIMENSIONS



(as seen in the Sierra Leone demo)

DISAGGREGATION AND ATTRIBUTE CATEGORIES

- ▶ disaggregation categories (DCs)
are attached to **data elements**
- ▶ attribute categories (ACs)
are attached to **data sets**

MORE DIMENSIONS

of a data value

- ▶ **Where?**

organisation unit

- ▶ **When?**

period

- ▶ **Who / what / where / when / how / why?**

data element and disaggregate category options

- ▶ **Who / what / where / when / how / why?**

data set and attribute category options

DISAGGREGATION AND ATTRIBUTE CATEGORIES

- ▶ disaggregation categories with data elements

	MALE				FEMALE			
	<15	15-24	25-49	>49	<15	15-24	25-49	>49
STAGE I	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

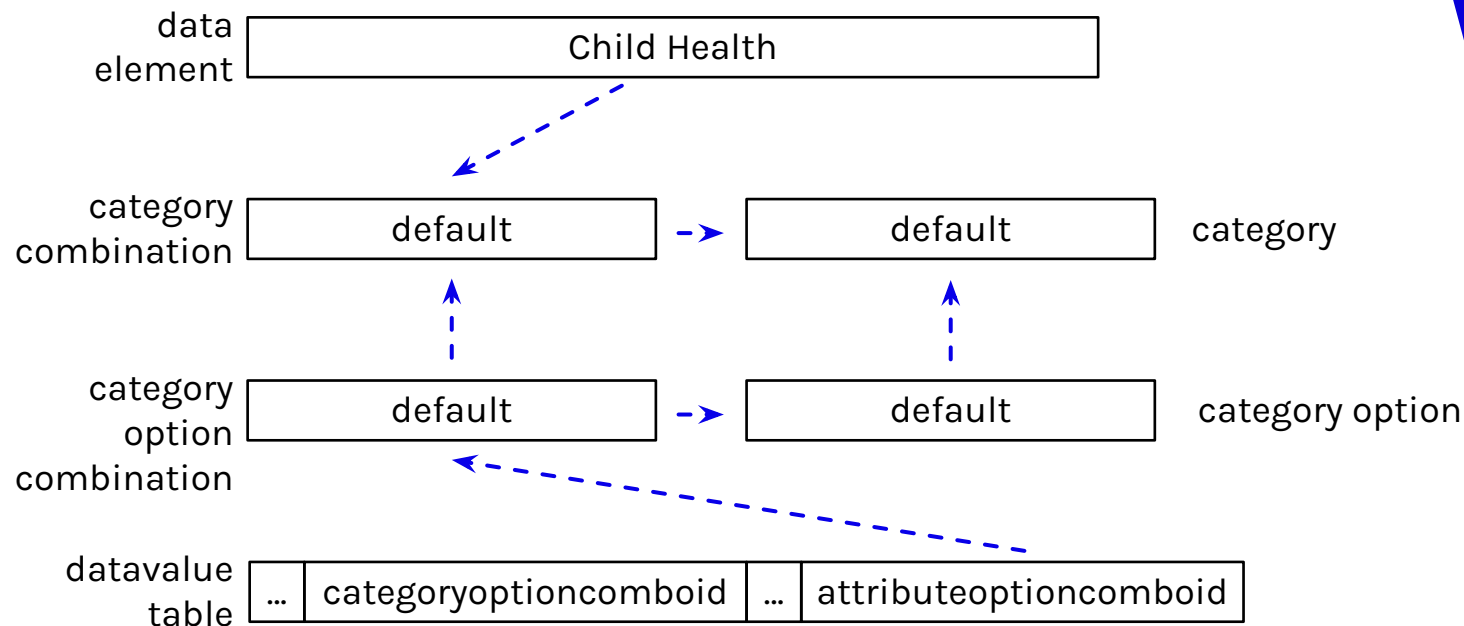
- ▶ attribute categories with data sets

Organisation Unit	<input type="text" value="Sierra Leone"/>		
Data Set	<input type="text" value="ART monthly summary"/>		
Period	<input type="text" value="July 2017"/>	<input type="button" value="Prev year"/>	<input type="button" value="Next year"/>
Implementing Partner	<input type="text" value="APHIAplus"/>		
Project	<input type="text" value="[Select option]"/>		

ATTRIBUTE CATEGORIES

- ▶ project
- ▶ partners
- ▶ accounts
- ▶ etc.
- ▶ zero dimensions
- ▶ one dimension
- ▶ two dimensions

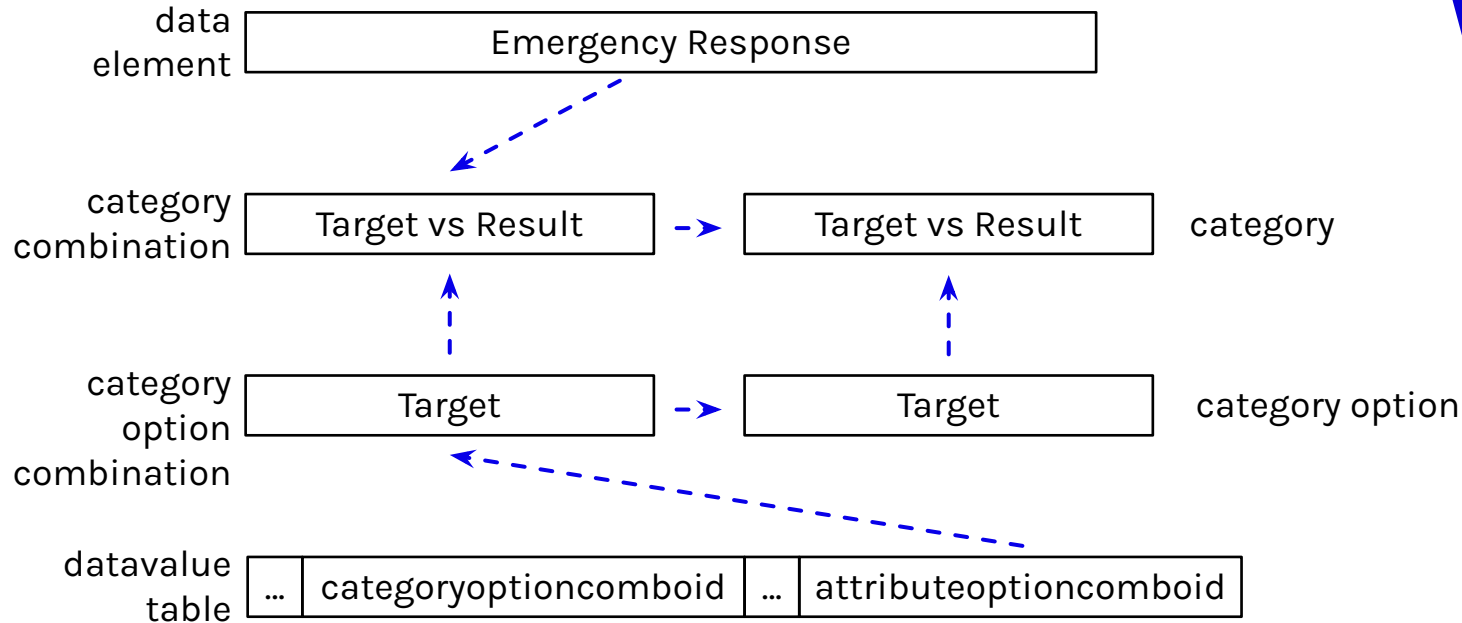
ATTRIBUTE CATEGORY WITH ZERO DIMENSIONS



(as seen in the Sierra Leone demo)

ATTRIBUTE CATEGORY WITH ONE DIMENSION

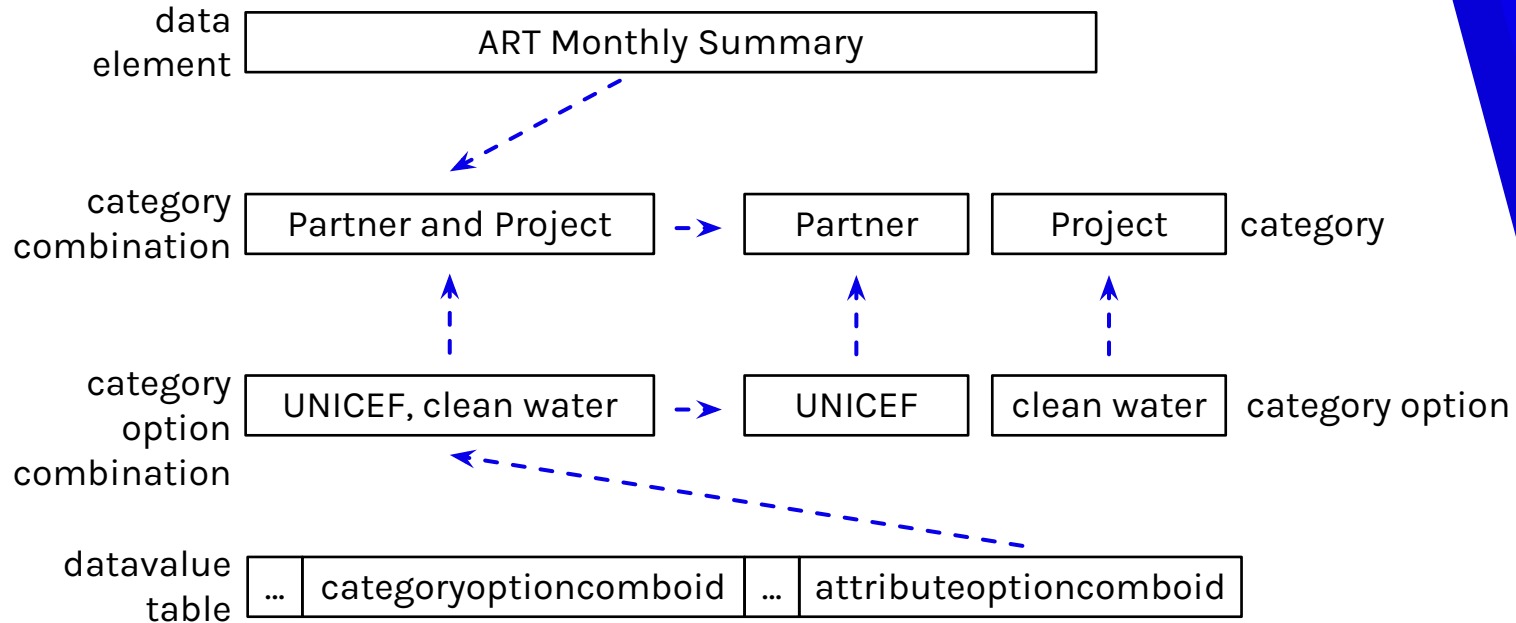
Target vs Result



(as seen in the Sierra Leone demo)

ATTRIBUTE CATEGORY WITH TWO DIMENSIONS

Partner and Project



(as seen in the Sierra Leone demo)

WHEN TO USE DISAGGREGATION VS ATTRIBUTE CATEGORIES

- ▶ Use DCs when you want to use different combinations of categories on different data elements within a data set
- ▶ Use DCs when you want to enter all the category option combinations on one data entry screen
- ▶ Use ACs when you want to use the same combination of categories for all the data in a data set
- ▶ Use ACs when you want to enter only one category option combination on one data entry screen

CATEGORY OPTION CONSTRAINTS

- ▶ start date
- ▶ end date
- ▶ open periods after end date
- ▶ organisation units

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2.

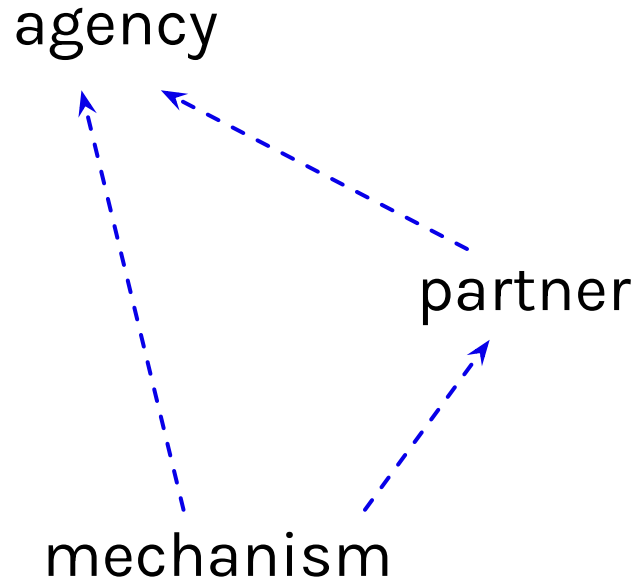
ANALYZING DIMENSIONS

ANALYZING ATTRIBUTE CATEGORIES

- ▶ category option groups
- ▶ category option group sets

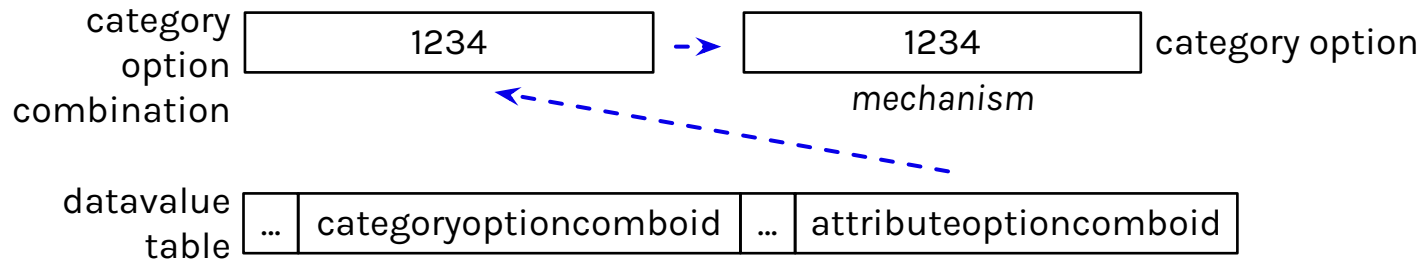
EXAMPLE

PEPFAR use case



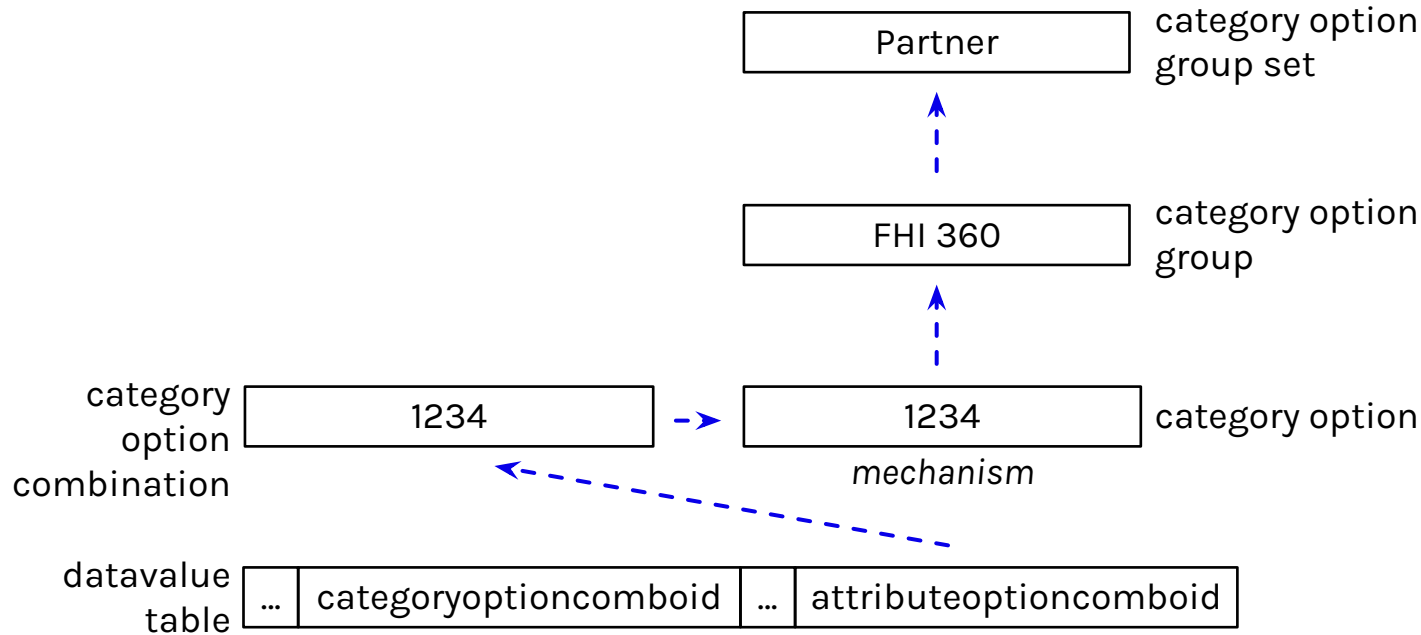
EXAMPLE

PEPFAR mechanisms



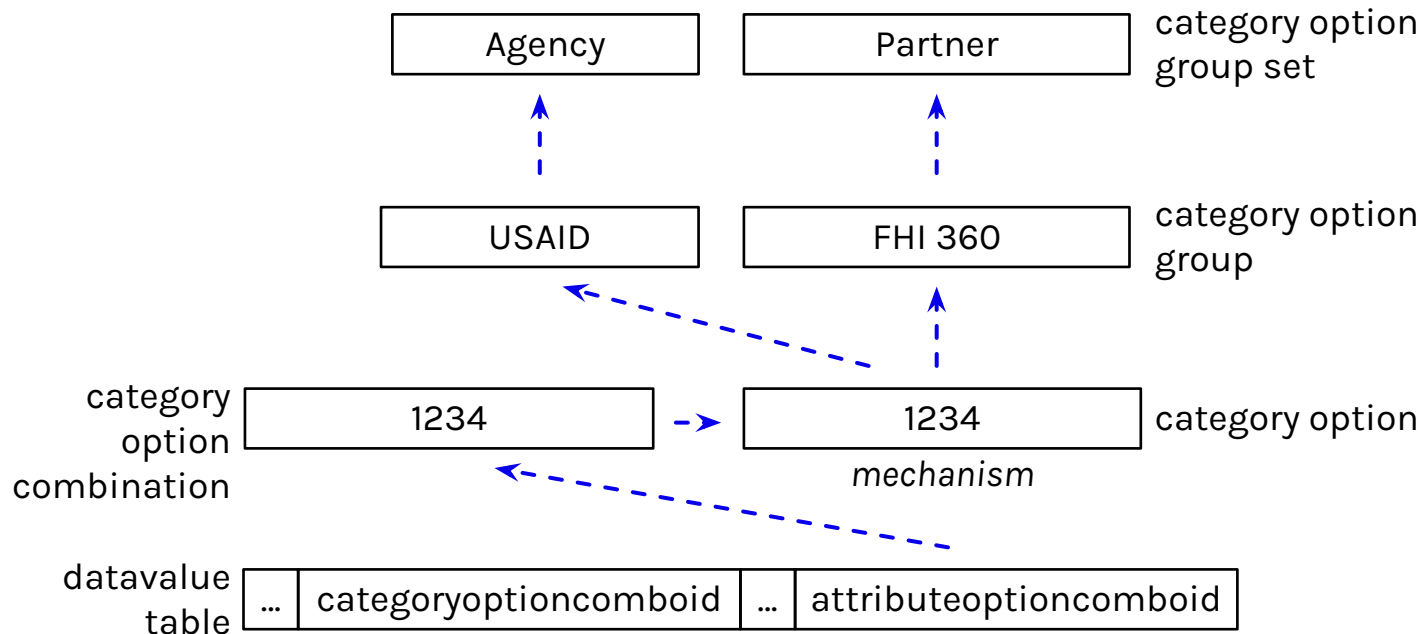
EXAMPLE

PEPFAR partners



EXAMPLE

PEPFAR agencies and partners

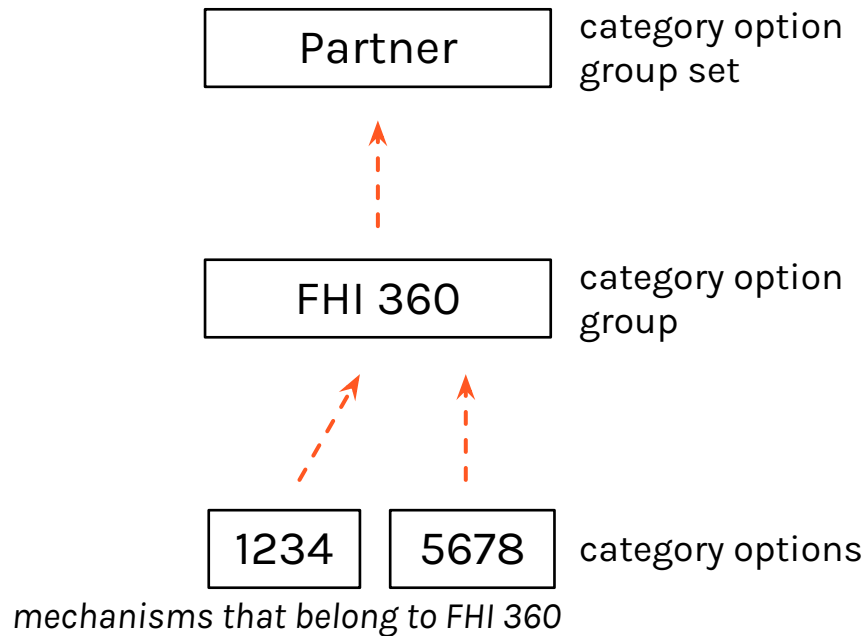


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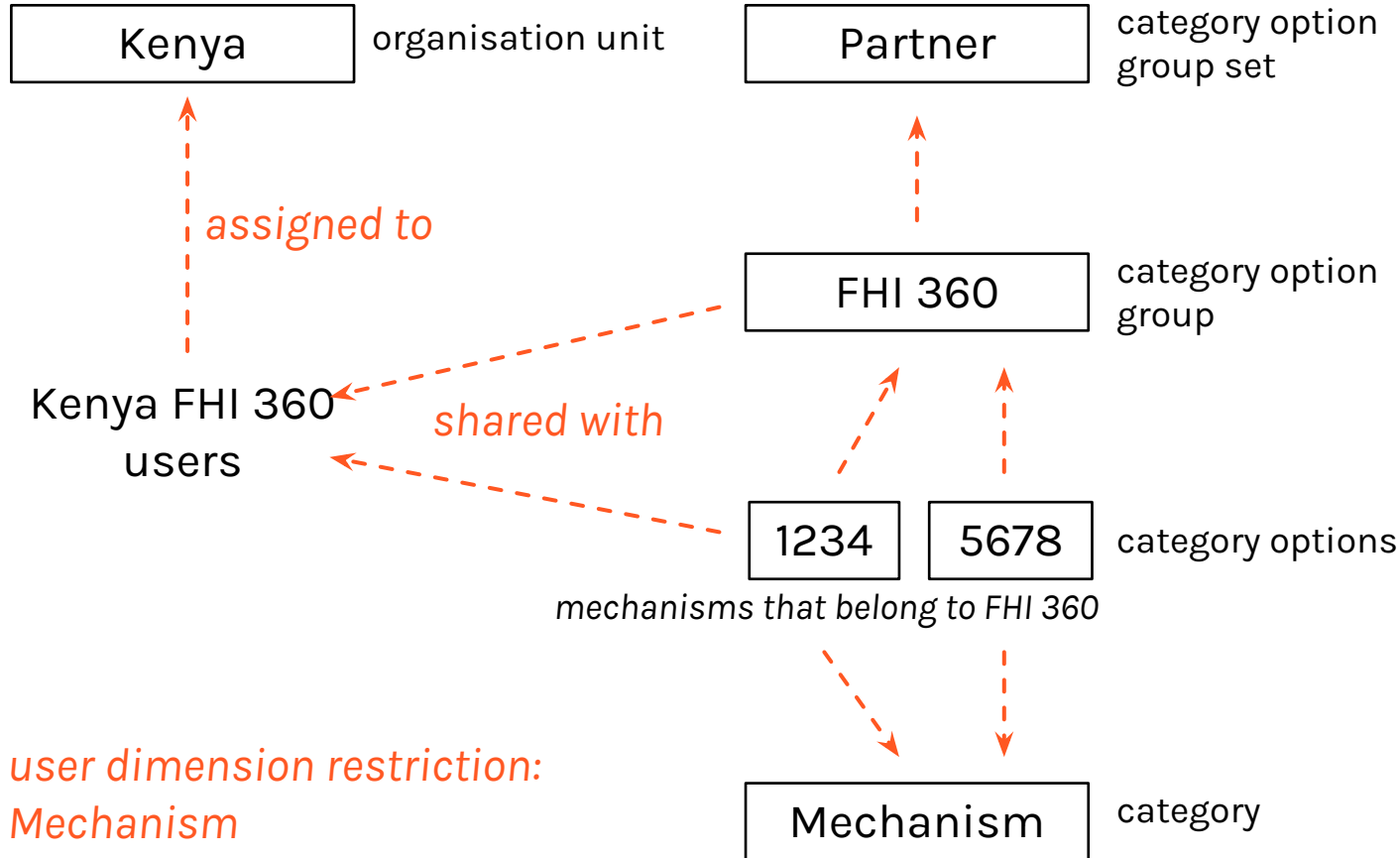
3.

SHARING
METADATA

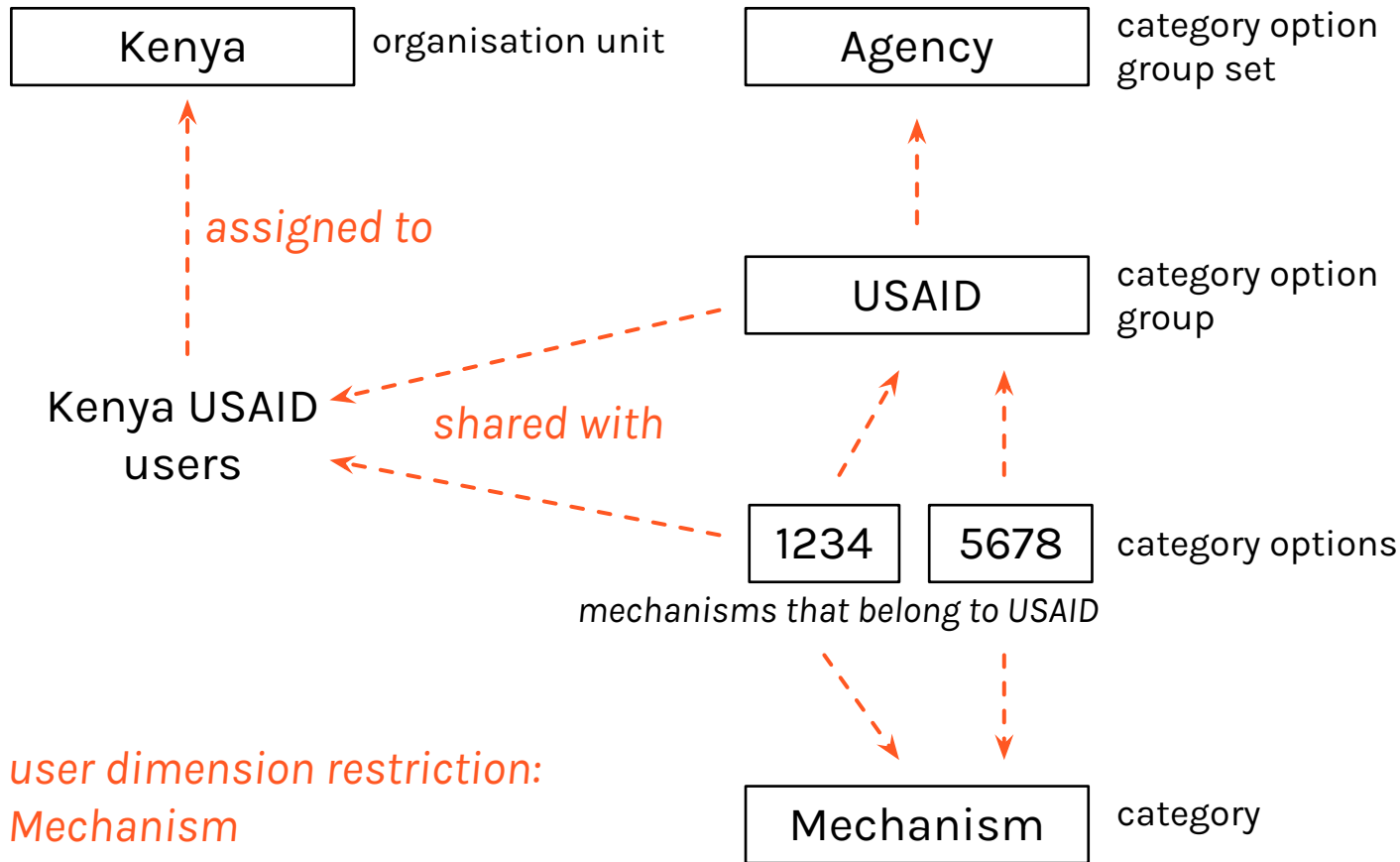
PARTNER USERS SHARING



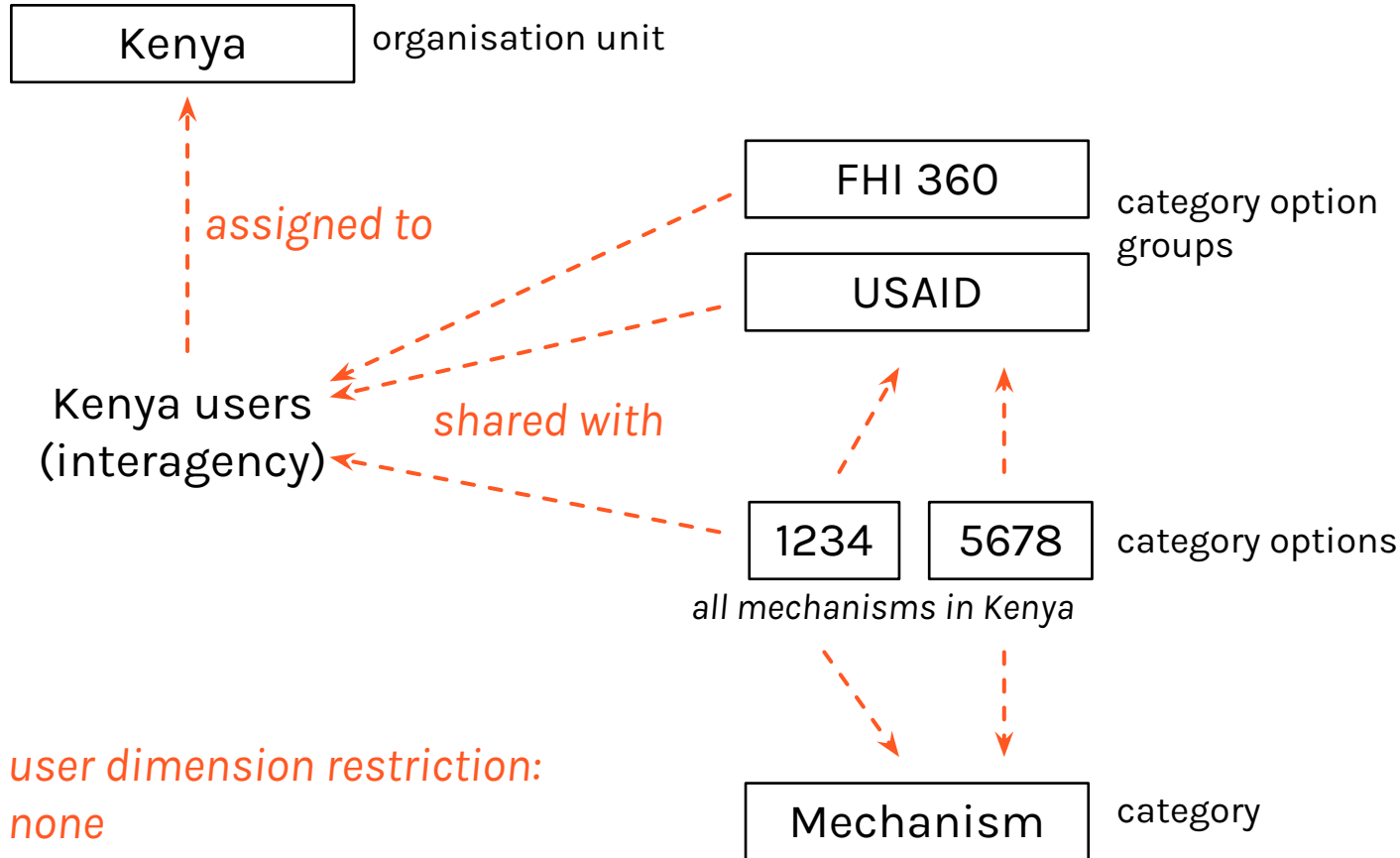
PARTNER USERS SHARING



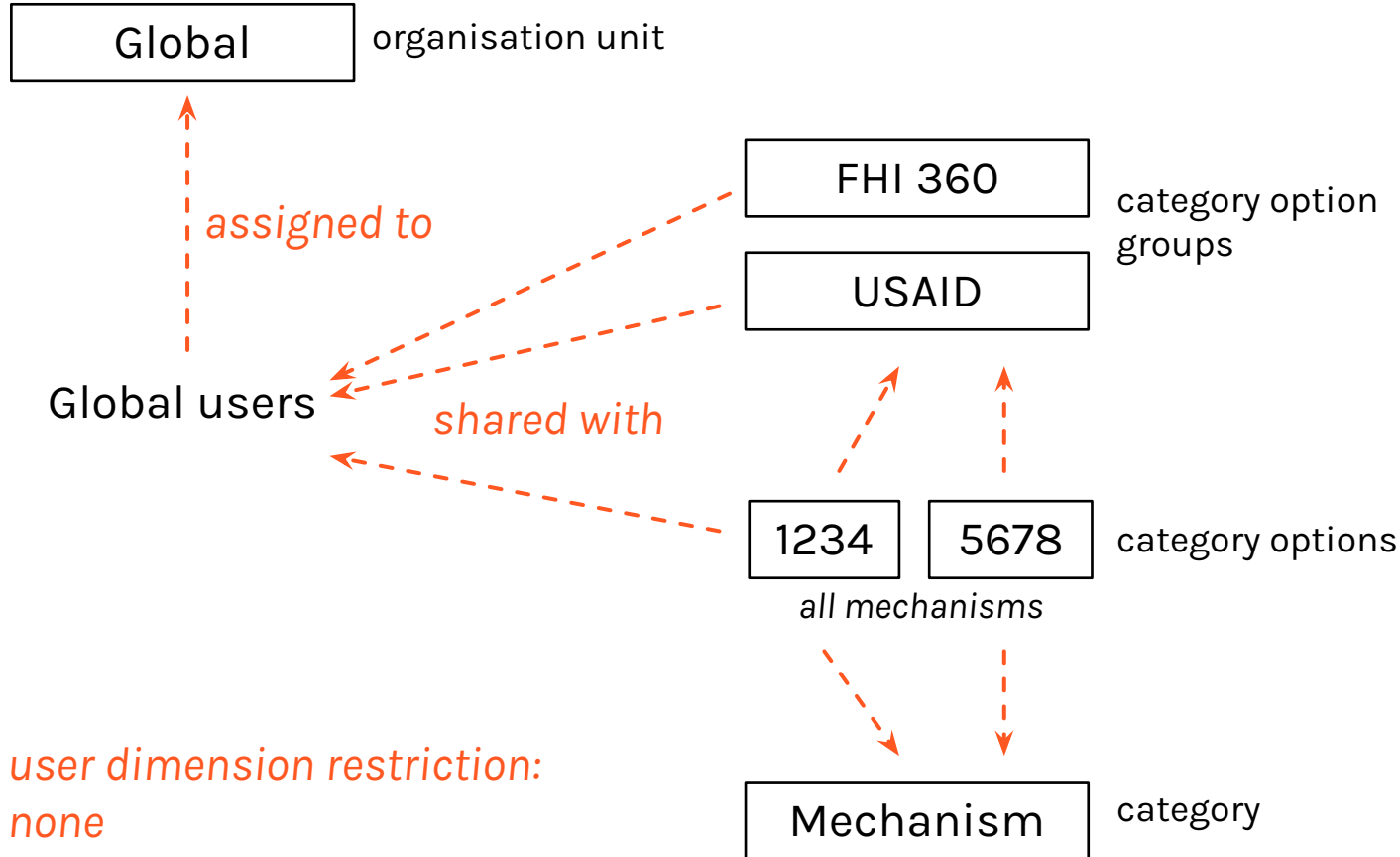
AGENCY USERS SHARING



COUNTRY USERS SHARING



GLOBAL USERS SHARING



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4.

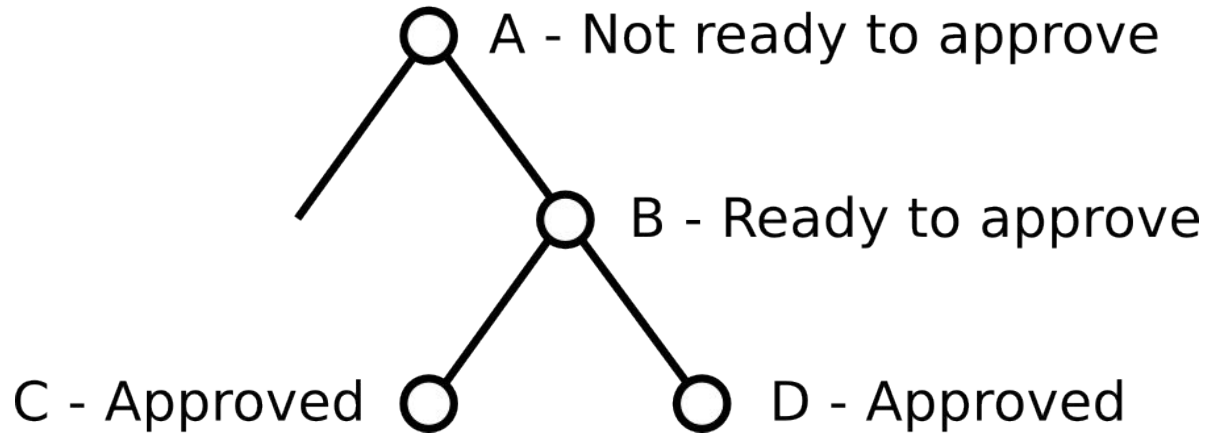
APPROVALS

DATA APPROVAL LEVELS

- ▶ Approval level is based on organisation unit level
- ▶ Approval level can also use attribute categories

DATA APPROVAL HIERARCHY

Organisation units

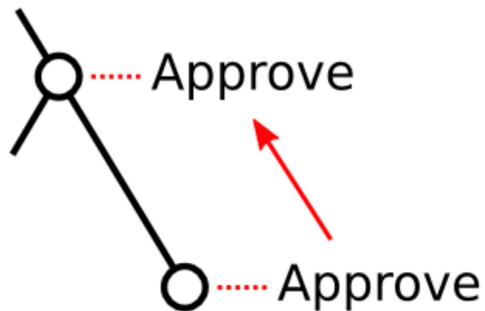


DATA APPROVAL LEVELS

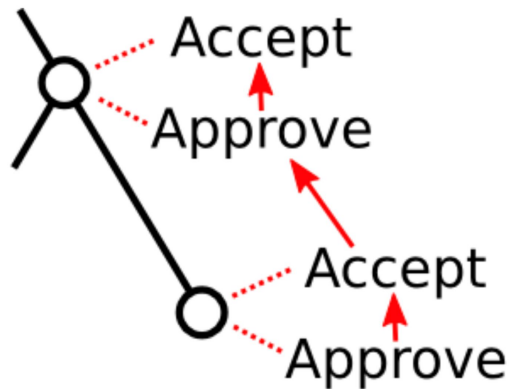
- ▶ A data approval level is based on an organisation unit level
- ▶ An organisation unit level may or may not have a corresponding data approval level
- ▶ For example:
 - org unit level 1: **Country**
 - org unit level 2: **Province** - approval level 1
 - org unit level 3: **District**
 - org unit level 4: **Subdistrict** - approval level 2
 - org unit level 5: **Facility**

NUMBER OF STEPS

to perform an approval
(a system setting)



1 step per approval level:
- Approve



2 steps per approval level:
- Approve
- Accept

DATA APPROVAL WORKFLOWS

- ▶ A data approval workflow specifies a period type and one or more data approval levels
- ▶ Optionally, a data set may specify one data approval workflow
- ▶ For example:

Workflow	Approval levels	Workflow Period type	Data sets
HIV	1, 3	Monthly	HIV Care Monthly, HIV Pediatric monthly summary
Stock	1, 3	Monthly	EPI Stock
Admin	1, 2	Quarterly	Expenditures, Staffing

PERIOD TYPES FOR WORKFLOW AND DATA SET

- ▶ Does the period type have to be the same between a data set and the workflow that approves it?
- ▶ Answer: no
- ▶ It can be the same, smaller, or larger

PERIOD TYPES FOR WORKFLOW AND DATA SET

2021 Q4 (Oct- Dec)

quarterly workflow
approval

approves:

2021-10 (Oct)	2021-11 (Nov)	2021-12 (Dec)
---------------	---------------	---------------

monthly data sets

2021 Q4 (Oct- Dec)

quarterly data sets

...

2021

yearly data sets

In short, any data set that ends during the approved period

APPROVALS FOR AGGREGATE AND EVENT

- ▶ Currently approvals apply only to aggregate data (data sets)
- ▶ In the future, approvals could be extended to event data by specifying a workflow for a program

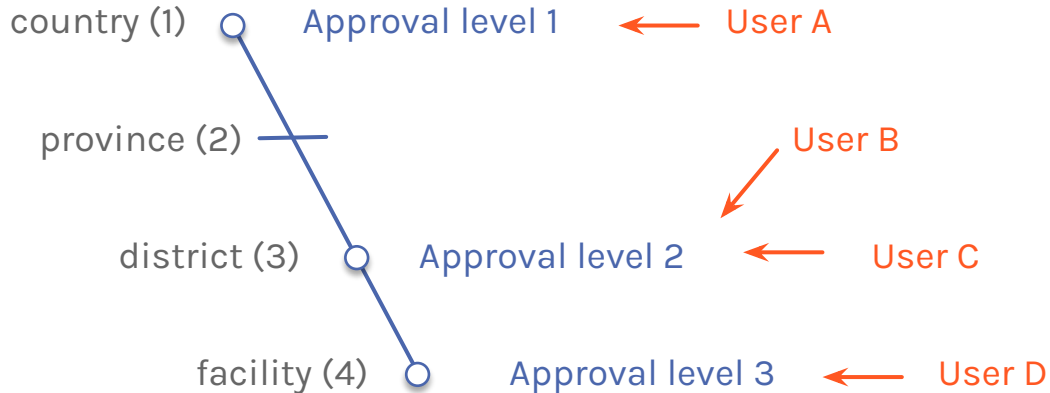
WHAT DOES DATA APPROVAL ACTUALLY DO?

- ▶ It locks data from being entered or changed
 - ▷ for a given organisation unit
 - ▷ and organisation units under it
 - ▷ for a given period
 - ▷ for data elements belonging to any data set in the workflow
 - ▷ for attribute categories, which we'll discuss soon
- ▶ Optionally, it hides unapproved data from higher-level users
 - ▷ this option is turned on with a system-wide setting

DATA HIDING

- ▶ A system setting optionally hides unapproved data from higher-level users

organisation unit level



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5.

ALL TOGETHER NOW

DATA APPROVALS AND ATTRIBUTE CATEGORIES

- ▶ Data for each attribute category are always approved independently
- ▶ Approval levels can be defined in one of these ways:
 1. one approval level for an organisation unit level
 2. two approval levels for an organisation unit level
 3. more than two approval levels for an organisation unit level

ONE APPROVAL LEVEL

per organisation unit level

For approvals at different organisation unit levels,
leave the category option group set blank

Approval level	Organisation unit level	Category option group set
Country (1)	Country (1)	
District-All (2)	District (4)	
Facility (3)	Facility (5)	

TWO APPROVAL LEVELS

per organisation unit level

Choose a category option group set for the second approval level using the same organisation unit level

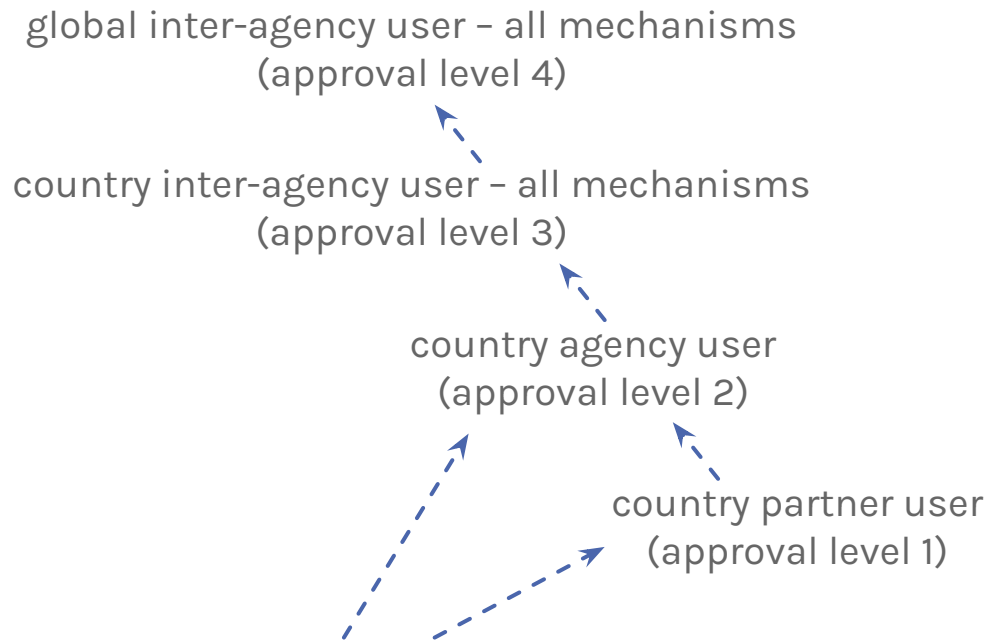
Approval level	Organisation unit level	Category option group set
Country (1)	Country (1)	
District-All (2)	District (4)	
District-Partner (3)	District (4)	Project Partners

Approval level 3 is for partners who are limited to only some category option combos (grouped by partner)

Approval level 2 is for users with no such restrictions

THREE APPROVAL LEVELS

per organisation unit level



Attribute option combo = attribute option = mechanism

THREE APPROVAL LEVELS

per organisation unit level

Choose a different category option group set for each additional approval level using the same organisation unit level

Approval level	Organisation unit level	Category option group set
Global (1)	Global (1)	
Inter-Agency (2)	Country (3)	
Funding Agency (3)	Country (3)	Funding Agency
Implementing Partner (4)	Country (3)	Implementing Partner

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6.

CODA



THANKS!

Any questions?

Contact: ben@dhis2.org and jim@dhis2.org

This presentation coming soon to Sched
and also to Github: bit.ly/hispos_mmwa